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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/707,710	11/07/2000	Jeffrey A. Korn	1029-0100	9810
25263	7590	05/18/2004		
J GRANT HOUSTON AXSUN TECHNOLOGIES INC 1 FORTUNE DRIVE BILLERICA, MA 01821			EXAMINER	WANG, GEORGE Y
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/707,710	KORN ET AL.	
	Examiner	Art Unit	
	George Y. Wang	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 March 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 6-8 and 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 6-8 and 10-19 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04 November 2002 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Drawings

1. New formal drawings are required in this application because the drawings supposedly filed February 20, 2001 that Applicant referred to in Applicant's Remarks filed March 5, 2004 are not found in the application, and therefore, have not been considered by Examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 6-8, 10, 12-13, and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miles (U.S. Patent No. 4,673,244) in view of Kuhara et al. (6,340,831, from hereinafter "Kuhara") and Flanders (U.S. Patent No. 6,345,059).

Miles discloses a process for manufacturing a semiconductor laser that requires installing the chip (fig. 4, ref. 120) in a package, inserting and securing a polarization-maintaining optical fiber through the ferrule and feedthrough (col. 3, lines 41-43), aligning the endface to the energized semiconductor chip (col. 4, lines 4-6) and detecting the polarization extinction ratio (PER) of light transmitted through the fiber from the semiconductor chip (fig. 3), and then axially rotating the endface of the fiber to maximize the PER through detection on a slow or fast path or axis (fig. 3). Miles also teaches a process of securing the fiber on the mounting structure by sealing around the fiber, before or after axial rotation adjustments (col. 5, lines 39-51). Miles also teaches the use of a mounting structure to improve the PER (fig. 3).

However, Miles fails to specifically disclose installing a semiconductor chip in a package on a bench and securing an endface of the optical fiber to the bench and the reference also does not specifically teach a mounting structure that is deformable.

Kuhara discloses semiconductor laser (fig. 18, ref. 70) with a semiconductor chip (col. 15, lines 61-66) on a bench (fig. 18, ref. 98) and securing an endface of the optical fiber (fig. 18, ref. 91) to the bench (col. 16, lines 1-2).

Flanders discloses a deformable mounting structure (col. 4, lines 41-44) that enables active and passive alignment during system manufacture or calibration after an in-service period (col. 4, lines 41-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have installed a semiconductor chip in a package on a bench and securing an endface of the optical fiber to the bench since one would be motivated to create a laser that is smaller in size and subsequently cheaper to manufacture (col. 16, lines 5-9). Moreover, such a method produces a device that is more suitable for long distance communication (col. 6, lines 33-35), has lower optical loss (col. 6, lines 35-38), and has easier handling for optical transmission (col. 8, lines 8-12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a deformable mounting structure since one would be motivated to further maximize PER during the process of manufacture of the semiconductor laser device (col. 4, lines 41-44). A deforming structure allows fibers that are already aligned and secured to be readjusted so that PER can be enhanced until a desired ratio level is reached (col. 4, lines 41-44). And this is important because, according to Miles, the level of optimally desired PER relates directly to the quality of the laser light that will emerge from the fiber. If the PER is optimized, even when the fiber is shortened, the light that is outputted will be high quality, linearly polarized light that is independent of fiber length and is therefore, highly useful for designed application (col. 5, lines 52-62).

4: As to claims 11, 14, and 15, Miles discloses a process for manufacturing a semiconductor laser as recited above, however, the reference fails to specifically

disclose plastically deforming a mounting structure to which the fiber endface is secured and where axial fiber rotation and PER maximization can be performed (fig. 3).

Flanders discloses a deformable mounting structure (col. 4, lines 41-44) that enables active and passive alignment during system manufacture or calibration after an in-service period (col. 4, lines 41-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a deformable mounting structure since one would be motivated to further maximize PER during the process of manufacture of the semiconductor laser device (col. 4, lines 41-44). A deforming structure allows fibers that are already aligned and secured to be readjusted so that PER can be enhanced until a desired ratio level is reached (col. 4, lines 41-44). And this is important because, according to Miles, the level of optimally desired PER relates directly to the quality of the laser light that will emerge from the fiber. If the PER is optimized, even when the fiber is shortened, the light that is outputted will be high quality, linearly polarized light that is independent of fiber length and is therefore, highly useful for designed application (col. 5, lines 52-62).

Response to Arguments

5. Applicant's arguments with respect to claims 6-8 and 10-19 have been considered but are moot in view of the new ground(s) of rejection.

With regard to the limitation "by deforming the mounting structure," Applicant clearly combined the limitations of canceled claim 9 into independent claim 6. Examiner

notes that this limitation in claim 9 was previously rejected and Applicant has recognized the teaching of "deforming a mounting structure" in the Flanders reference. As such, Examiner recognizes that obviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for the Miles reference to include a deforming mounting structure is clear and apparent in the Flanders reference (see above Rejection).

Thus, Examiner holds to the validity of the references used and maintains rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 571-272-2304. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gw
May 4, 2004


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